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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,431

06/14/2005

George Hoshi

040549

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KRATZ, QUINTOS & HANSON, LLP
1420 K Street, N.W.
Suite 400
WASHINGTON, DC 20005

EXAMINER

PRICE, CRAIG JAMES

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

11/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,431

Applicant(s)

HOSHI ET AL.

Examiner

Craig Price

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawing objection is removed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1,4/1,6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (6,076,543) in view of Ikeda et al. (6,0114,498) and further in view of Mittendorf (2,819,858).

Johnson discloses a fluid control apparatus comprising a plurality of lines (as shown in figure 10) arranged in parallel on a base member (42) and having inlets, as well as outlets, facing toward the same direction, each of the lines comprising a plurality

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of fluid control devices (44,46,48) arranged in an upper stage and a plurality of block coupling members (77,78,80) arranged in a lower stage, and a space, with the line support member removably attached (using 106) to the base (98), a space for positioning a tape heater holding clip therein being provided in each of locations between adjacent fluid control devices as shown in figures 2-10.

Johnson has disclosed all of the features of the claimed invention although is silent as having the fluid control apparatus being characterized in that at least one of the lines is provided on each of opposite sides thereof with a tape heater, the tape heaters being held from opposite sides thereof to the line with a resilient force acting to reduce the spacing between the opposed walls of the clip, the line provided with the heaters being mounted on a line support member removably attached to the base member.

Ikeda et al. discloses a device which teaches a system having the fluid control apparatus being characterized in that at least one of the lines is provided on each of opposite sides thereof with a tape heater (11).

Mittendorf discloses a heater being held from opposite sides thereof to the line by the clip (figures 2-4), the clip being an inverted U shape made of from a thin metal plate.

It would have been obvious to one of ordinary skill in the art at the time of invention to employ the tape heater of Ikeda et al. into the device of Johnson to have the fluid control apparatus being characterized in that at least one of the lines is provided on each of opposite sides thereof with a tape heater, in order to prevent condensation and for preventing the re-liquefaction of a gas as converted from a fluid which is in the form of a liquid at room temperature (Col.1, Lns. 5-10).

Furthermore, It would have been obvious to one of ordinary skill in the art at the time of invention to employ the clip of Mittendorf into the device of Johnson and Ikeda et al. to have the tape heaters being held from opposite sides thereof to the line with a resilient force acting to reduce the spacing between the opposed walls of the clip, the line provided with the heaters being mounted on a line support member removably attached to the base member, in order to hold the heater closely to the surface thereby assuring good heat transfer (Col.2, Lns. 61-66).

Regarding claim 6, the heater tape would be in contact with the block coupling members in as much in the same manner as applicant's device is shown.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '543, Ikeda et al. '498 and Mittendorf '858 and further in view of Lengstorf (3,733,459).

Johnson, Mittendorf and Ikeda et al. have disclosed all of the features of the claimed invention although are silent to the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore.

Lengstorf discloses a device which teaches the use of a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore as shown in figure 3. It would have been obvious to one of ordinary skill in the art at the time of invention to employ Lengstorf's heater into the device of Johnson, Mittendorf and Ikeda et al. to have the line support member has a heater insertion bore

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formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore, in order to enable use during subfreezing conditions (Col.1, Lns. 3-6).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '543 and Lengstorf (3,733,459).

Johnson discloses all of the features of the claimed invention including wherein each of the coupling members is slidably mounted on the line support member, and each of the fluid control devices is mounted on at least two adjacent coupling members, with the line support member removably attached (using 106) to the base (98) member, although is silent in having the line support member having a heater insertion bore formed therein and extending longitudinally thereof, a sheath heater being inserted into the bore without insulating material.

Lengstorf discloses a device which teaches the use of a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore as shown in figure 3. It would have been obvious to one of ordinary skill in the art at the time of invention to employ Lengstorf's heater into the device of Johnson and Ikeda et al. to have the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore without insulating material, in order to enable use during subfreezing conditions (Col.1, Lns. 3-6).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to remove the insulating material from the heater, since it

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has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art.

6. Claims 2,3,4,5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '543 and Ikeda et al. '498 and further in view of Lengstorf (3,733,459).

Johnson and Ikeda et al. have disclosed all of the features of the claimed invention although are silent to the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore without insulating material, and the base member has a plurality of lateral rails made of a nonmetallic material and extending in a direction orthogonal to the lines.

Lengstorf discloses a device which teaches the use of a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore, and the base member (32) has a plurality of lateral rails made of a nonmetallic material and extending in a direction orthogonal to the lines as shown in figures 2 and 3. It would have been obvious to one of ordinary skill in the art at the time of invention to employ Lengstorf's heater into the device of Johnson and Ikeda et al. to the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore without insulating material, and the base member has a plurality of lateral rails made of a nonmetallic material and extending in a direction orthogonal to the lines, in order to enable use during subfreezing conditions (Col.1, Lns. 3-6).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to remove the insulating material from the heater, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art.

Allowable Subject Matter

7. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1-8 have been considered but are not persuasive. The Johnson et al. reference discloses the line support member removably attached (using 106) to the base (98) member. Furthermore, the clip of Mittendorf is used in combination with Johnson and Ikeda et al. in order to hold the heater closely to the surface thereby assuring good heat transfer, for the clip limitation requirements in claim 1 and 8.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Price whose telephone number is (571) 272-2712. The examiner can normally be reached on 7AM - 5:30PM M-R, Increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CP



30 October 2007



JOHN RIVELL
PRIMARY EXAMINER
ART UNIT 347